Appendixes

Using Aid to Enhance Security During the Cold War

ince World War II, the United States has frequently targeted foreign assistance to specific countries for security reasons. Its approaches for doing so have passed through several phases. In the first, lasting from the late 1940s into the first half of the 1950s, the focus of attention was primarily on those countries now part of the Organization for Economic Cooperation and Development. The next phase was characterized by increasing aid flows to other parts of Asia, such as South Korea and Taiwan, that began to rival those to Europe. In the third phase, from the mid-1960s until the mid-1970s, almost all aid went to Asia and increasingly to South Vietnam. Finally, in the fourth phase, which lasted from the mid-1970s until the present, most security-related aid has gone to the Middle East (see Figure A-1).1

Right after the war, the first priority of the allied victors was to ensure the dismantlement of most of the German and Japanese armed forces. But large volumes of U.S. overseas aid, first economic and later military-related, began to flow with the beginning of the Marshall Plan in the late 1940s. Starting around 1950--after the introduction of "the Iron Curtain" in Europe, the rise of the Communist government in China, the explosion of a

By the mid-1950s, aid to Europe and Japan began to decline. But South Korea and Taiwan each began to receive an average of more than \$1 billion a year in aid. Assistance to a number of other countries in Asia--particularly South Vietnam in the military sphere and India and Pakistan in the economic sphere--began to grow significantly as well. Some attention also began to be paid to Latin America and the Middle East at this time, particularly in economic aid programs. But the aid flowing to them did not rival that going to Asia.

By the mid-1960s, aid to Europe declined to only about \$1 billion a year, and the Asia region received most U.S. foreign assistance. During the decade from the mid-1960s until the early 1970s, the vast majority of total aid for security went to countries in that region. The majority of U.S. bilateral economic aid went there as well, as it had been since the mid-1950s.

As aid to Europe was virtually phased out, overall security aid declined to a level just slightly more than \$5 billion a year in the mid-1960s--one-third as much as the U.S. economic aid budget. But security aid then climbed back to more than \$15 billion annually in the early 1970s under the so-

Soviet nuclear device, and finally the outbreak of the Korean War--large amounts of U.S. aid were used to build up German and other European militaries as stalwarts against the global Soviet threat. Overall, annual security aid levels surpassed \$20 billion for 1951 and 1952 and averaged around \$10 billion for the rest of the decade (expressed in 1994 dollars)--in contrast to the pre-1950 level of less than \$2 billion.

For more detail on the geopolitics of these phases, see for example, John Lewis Gaddis, Strategies of Containment (New York: Oxford University Press, 1982); Jerry F. Hough, The Struggle for the Third World (Washington, D.C.: Brookings Institution, 1986); Stephen T. Hosmer and Thomas W. Wolfe, Soviet Policy and Practice Toward Third World Conflicts (Lexington, Mass.: Lexington Books, 1983); Raymond L. Garthoff, Detente and Confrontation (Washington, D.C.: Brookings Institution, 1985).

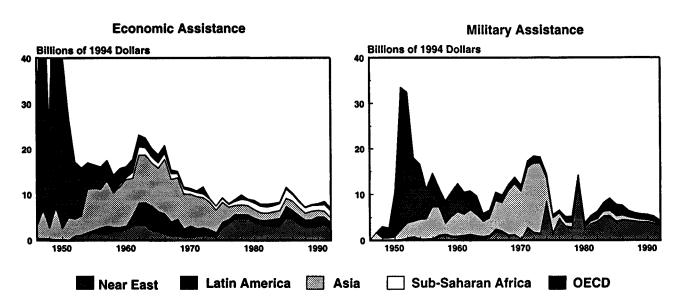
called Nixon Doctrine, as the United States pumped billions of dollars into South Vietnam in tandem with its own military withdrawal from that country. For the first time, security-related assistance overtook U.S. economic aid in magnitude.

As the Vietnam era wound down and the Congress cut off further aid to the regime in Saigon, overall aid levels and security aid in particular took a fall around 1974-1975. But a harbinger of new requirements already had appeared in the Middle East. Partly in response to increased Soviet arms sales to countries bordering Israel, the United States began to give larger amounts of aid to Israel. Dollar volumes then shot up drastically during and after the 1973 October war.

By 1976, the Middle East region had become the largest recipient of U.S. aid, and it has retained that position to the present. Indeed, at both the beginning and the end of the 1980s, aid to the Middle East constituted well over three-quarters of total U.S. security-related assistance. During the mid-1980s, however, aid to several less prosperous but important allies in Europe, East Asia, and Central America increased for several years, before diminishing in the second half of the decade as the Cold War wound down. Substantial amounts of covert aid also were directed to insurgents fighting governments in Angola, Nicaragua, Afghanistan, and elsewhere during the 1980s, as a result of a set of policy decisions often known as the Reagan Doctrine. But by the end of the decade, aid was again highly concentrated in the Middle East region.

With the end of the Cold War, aid levels to the Middle East have not changed notably. But aid to other friends and allies--particularly the Philippines, Pakistan, Greece, Turkey, Portugal, and El Salvador--has declined considerably. In the cases of the first two countries, the lack of a global Soviet threat meant that a powerful unifying force was lost-thereby raising the visibility of their political differences. As for the southern European countries, the

Figure A-1.
U.S. Overseas Loans and Grants, 1946-1992



SOURCE: Congressional Budget Office based on data from the Agency for International Development.

NOTES: OECD = Organization for Economic Cooperation and Development.

In 1947, 1949, and 1950, total levels of U.S. economic assistance were \$64.5 billion, \$70.7 billion, and \$42.6 billion, respectively.

dissolution of the Warsaw Pact reduced the U.S. concern over the southern flank of the North Atlantic Treaty Organization. Concerning El Salvador and resistance groups such as the National Union for the Total Independence of Angola (UNITA), the

end of the Cold War also spelled the end of large aid programs to fight Soviet clients around the world. It also made possible a new emphasis on U.N. peacekeeping operations as a means of dealing with localized regional and ethnic conflict.

Aid, Trade, and the U.S. Economy

U.S. policymakers quickly dismiss the notion of expanding foreign aid--or even of keeping existing programs. They may also have some misgivings about foreign aid's past success stories--especially the East Asian countries whose economies are growing faster than that of the United States, piling up trade surpluses with the United States, and moving out to the forefront of some high-technology sectors.¹

However, trade with other countries is not something the United States really should fear under any circumstances. The United States continues to benefit from a competitive international capitalist system, though it does have economic problems that would benefit from redress.

Most economists believe that trade deficits in the United States are caused primarily by a lack of national savings. When the pool of savings to fund private investment or public spending is small relative to the demand for that capital, interest rates rise and may attract foreign investors--driving up the value of the dollar on international currency markets. But when the dollar is expensive, so are U.S. exports--meaning that foreigners have a harder time buying them. By contrast, foreign goods are relatively inexpensive, so they are purchased in large numbers. The result of these conditions is a U.S. trade deficit.²

That Japan and other former beneficiaries of U.S. aid thrive financially and have funded U.S. budget and investment deficits may actually be good news--even if the existence of those deficits is not. Foreign funds have allowed the United States to continue its penchant for consumption without sacrificing the country's economic future. Because Japan and certain other countries invested substantial amounts of their surplus export earnings in the United States during the 1980s, investment as a share of national income declined considerably less than it might have done otherwise.³

Moreover, exports have accounted for more than four-fifths of total U.S. economic growth since 1989. Much of this economic growth has been the result of trade with developing countries.⁴

Indeed, trade is an important contributing factor to both U.S. and global economic growth. Low trade barriers and a world full of growing economies let countries focus on doing what they have the greatest relative advantage in doing. Between the end of World War II and the early 1970s, for example, global growth rates were about twice as great as in previous boom periods and considerably higher than expected.⁵ Since then, overall global growth rates have returned to historical norms, but

See Michael Mastanduno, "Do Relative Gains Matter? America's Response to Japanese Industrial Policy," International Security (Summer 1991), pp. 73-113; Paul Kennedy, The Rise and Fall of the Great Powers (New York: Random House, 1987), pp. 514-535; Robert Gilpin, The Political Economy of International Relations (Princeton, N.J.: Princeton University Press, 1987), pp. 215-225, 394-408.

Charles L. Schultze, Memos to the President (Washington, D.C.: Brookings Institution, 1992), pp. 111-112.

Schultze, Memos to the President, pp. 114-119; Paul Krugman, The Age of Diminished Expectations (Cambridge: MIT Press, 1990), pp. 42-43.

Statement of Edward L. Saiers, Acting Director, Policy Directorate, Agency for International Development, before the Subcommittee on Economic Policy, Trade and Environment, House Committee on Foreign Affairs, May 4, 1993; Schultze, Memos to the President, p. 99.

W. Arthur Lewis, The Evolution of the International Economic Order (Princeton, N.J.: Princeton University Press, 1978), pp. 32-33; World Bank, World Development Report 1987 (New York: Oxford University Press, 1987), p. 40.

growth remains largely steady in outwardly oriented economies. Much of the credit for this sustained global expansion is given to the international economic framework provided by the General Agreement on Tariffs and Trade (GATT) process, as well as the U.S. philosophy of postwar global leadership that focused on helping other countries rebuild their economies.⁶

It is complicated to estimate precisely how trade affects the distributions of income and employment in the United States and other countries. As is well known, especially by those who lose their jobs because of foreign competition, trade does not help all people equally. Opening borders to the flow of goods and capital does add some dislocations to an already dynamic, changing economy. But overall, the distributional fairness of an open trade policy is not worse than that of a protectionist policy.⁷ On

balance, the effects of trade for the economy tend to be positive.

Thus, though a case can be made for reassessing U.S. trade policy in specific cases, and though there certainly is a very good case for increasing savings in the United States, the international economic climate of the last five decades has improved the general economic condition of the country. Trade and foreign investment involving other growing economies of the world have greatly benefited the United States.

The role of foreign aid in this process varies from case to case. Generally, it is modest. But it can play a role in jump-starting the economies of other countries, making it easier for them to adopt policies that are politically unpopular in the short term. It can also support programs that lead to a healthier, better educated, and more productive population over time. When properly applied, it can be a useful tool for both U.S. economic and security interests.

See Lewis, The Evolution of the International Economic Order, pp. 32-33; Gilpin, The Political Economy of International Relations, pp. 172-180, 190-192; World Bank, World Development Report 1987, pp. 38-48, 78-90.

Leland B. Yeager and David G. Tuerck, Foreign Trade and U.S. Policy (New York: Praeger, 1976), p. 171.

How to Pay for U.N. Peacekeeping: the Concept of an Escrow Account

n addition to the question of how much to pay, the United States may wish to reconsider how it pays the United Nations for peacekeeping missions--especially if it becomes confident that U.N. missions can be well chosen and prosecuted by the international community.

The current case-by-case system of financing can impede effective planning and implementation of U.N. missions. In its place, the United States might choose to place its U.N. peacekeeping funds in an escrow account. The President would control disbursements to the United Nations, under guidelines established by the Congress.

In the words of U.N. Secretary General Boutros Boutros-Ghali, "A chasm has developed between the tasks entrusted to this Organization and the financial means provided to it." In the past, the United Nations tended to conduct smaller and fewer peace-keeping operations. But the number of U.N. peace-keepers has increased greatly in the last two years. Current costs for peacekeeping are several times their past levels and now represent about half of total U.N. annual expenditures (not including those of the international financial institutions).

A recent Ford Foundation report, co-chaired by former Federal Reserve Chairman Paul Volcker and former Bank of Japan and Japan Development Bank official Shijuro Ogata, said about the funding dilemma:

Because each mission is financed separately, member states receive several peacekeeping

 Boutros Boutros-Ghali, An Agenda for Peace (New York: United Nations, 1992), p. 41. assessment requests each year. These requests come at odd times, in the middle of budgetary cycles, and governments often find it difficult to find the money without seeking special appropriations. The sheer frequency of requests creates an impression that U.N. peacekeeping is more expensive and burdensome than it really is. And because of the system's inherent uncertainty, the Secretary-General can never be sure how many new tasks and obligations the U.N. can afford to take on.²

Because of the case-by-case financing system, each request for added funding has high political visibility in the United States--providing a useful Congressional check on missions that might involve U.S. troops, but perhaps unnecessarily delaying lower-risk operations.

To cope with these types of problems, the United Nations has developed some fancy budgeting techniques. It borrows from the accounts of existing peacekeeping activities to pay the start-up costs of new missions and sometimes asks countries contributing troops and equipment to pay some of the costs associated with their activities without promise of reimbursement. It has also initiated a rather small revolving fund for peacekeeping start-up costs (totaling \$150 million in size, of which up to \$60 million can be made available for a new operation immediately).³

Independent Advisory Group on U.N. Financing, Financing an Effective United Nations (New York: Ford Foundation, 1993), p. 17.

^{3.} Ibid., pp. 17-18.

Even if such creative approaches succeed in producing sufficient funds, they often do so only after a delay that may reduce the initial effectiveness of the operation, cost lives, and ultimately make the operation more difficult. Observers who are skeptical of some types of U.N. peacekeeping missions might view the tightness in available funding as a useful check on the Secretary General or the U.S. President. But members of the Security Council are supposed to evaluate missions before authorizing them (and the United States, after all, retains a veto on all peacekeeping authorizations). Given that, why should missions be subject to delay once they have already been authorized?

Moreover, financial constraints could be even more restrictive in the future. A number of countries--including the United States--remain in arrears on their payments. Some countries, especially the former Soviet republics, may fall further into arrears if present trends continue.

Under an escrow approach, funds would be made available to the United Nations only as needed and authorized. The President might be required to certify that a given U.N. operation met guidelines established by the Congress before releasing any funds. Those guidelines might include the requirement that other countries not be substantially in arrears in their payment obligations. Unneeded funds would not be disbursed.4 The guidelines might also, in a case where a U.N. operation would involve U.S. combat forces, stipulate that the Congress be consulted in advance, as suggested in the 1994 State Department bill providing appropriations for peacekeeping and later in a bill submitted by the Senate Minority Leader. This type of approach might facilitate the types of U.N. activities that are widely seen as serving U.S. interests, while reserving special scrutiny for those missions seen as most dangerous or least likely to succeed.

Recommendations for a single annual assessment for U.N. peace-keeping to each member state can be found in William J. Durch and Barry M. Blechman, Keeping the Peace: The United Nations in the Emerging World Order (Washington, D.C.: Henry L. Stimson Center, March 1992), pp. 92-96; Independent Advisory Group, Financing an Effective United Nations, p. 26.

Development Assistance and an Expanded Agenda for the Environment

reserving and protecting the global environment is very important, even in those cases where it may not be demonstrably linked to U.S. national security. Pollution is not only displeasing aesthetically, it can cause serious damage to human health. Over the long term, if not addressed, it can harm soils and forests. The degradation of natural habitats can deplete the planet's genetic base in ways that can close off avenues of opportunity for medicine and agricultural research. Global warming conceivably could contribute to the flooding of coastal plains and drought in some of the world's agricultural basins--possible consequences of rising temperatures and corresponding rising ocean levels. The scientific verdict on the pace and nature of global warming remains out. But if it produced such effects, it conceivably could contribute to mass migration and conflict.

Moreover, although it is not part of this study's core security agenda, improving the reliability and cleanliness of traditional energy sources may have important bearing on national security. If fossil fuels are seen as harmful or unreliable, and renewable fuels too expensive, nuclear power could become increasingly attractive to developing countries. Nuclear power is accepted and indeed encouraged by the International Atomic Energy Agency. But Japan and certain other industrialized countries may use plutonium rather than low-enriched uranium in future power reactors. Should this trend extend to the developing countries, concerns about proliferation could become serious. Unlike low-enriched uranium, which must be enriched through very difficult processes before it can be used in nuclear weapons, plutonium can serve directly as a fissile material in bombs. And it is not particularly difficult to separate plutonium from nuclear fuel sources through chemical processes. Since obtaining fissile materials is commonly recognized as the most difficult part of building a nuclear bomb, the stakes involved in the plutonium power debate are enormous, and the world arguably has a strong interest in trying to discourage this type of power.

Foreign Aid and the Environment

What is the role of foreign aid in these difficult and important matters? In many cases, foreign aid or specific programs to protect the environment are less important than the basic regulatory and economic frameworks of individual countries. Most environmental concerns will be addressed if the broader societal costs of using natural resources are captured in user fees, tax systems, and the like. The major Western countries may be able to encourage such policies in other countries as much with trade levers such as the North American Free Trade Agreement (NAFTA) as with foreign aid. Moreover, the United States can often do more good for the environment by improving its own environmental practices than it can with aid.²

But an important role for foreign assistance remains. Subsistence farmers and their governments--often responding more to short-term political

For further discussion of these points, see Kenton R. Miller, Walter V. Reid, and Charles V. Barber, "Deforestation and Species Loss," in Jessica Tuchman Mathews, ed., *Preserving the Global Environment* (New York: W.W. Norton and Company, 1991), pp. 88-93.

Carnegie Endowment National Commission, Changing Our Ways (Washington, D.C.: Carnegie Endowment, 1992) p. 46.

and economic pressures than to the dictates of reasoned planning--may need prodding and financial inducements to do what they should, and to repair damage after serious harm to the environment has occurred.

As in most other parts of this study, the general premise here is that the United States would pay 25 percent of the foreign aid element of a new initiative, which itself would constitute about one-third of total funding for the projects and programs at issue.

The Rio Conference, Treaties, and Agenda 21

In 1992, some 150 countries met in Rio de Janeiro at the U.N. Conference on the Environment and Development (UNCED). There they discussed global and local environmental issues, as well as the ways in which countries could cooperate in addressing them.

Many of the concerns emphasized in Rio are addressed by the new aid initiatives discussed in Chapter 5. Notably, curbing population growth and promoting rural economic development with an emphasis on sustainable agriculture are very important from a global environmental perspective.

Yet the Rio agenda dealt with other matters as well. Delegates agreed that preserving large portions of remaining tropical rain forest is important aesthetically--but more to the point, that it is important for the planet's gene pool and for medicinal and agricultural reasons. It also mitigates the pace of greenhouse warming. And finding a way to keep forests in some equilibrium can ensure steady sources of fuelwood that are needed for cooking and other uses over the long term.

Finding cleaner and more efficient patterns of energy use is important to human health, not only in cities but in village settings where prolonged exposure to wood fires can cause concentrations of atmospheric pollutants. Eliminating chlorofluorocarbons is of acute importance for health and agriculture. Expanding protection of the ozone layer by banning methyl bromide, a harmful pesticide, may

also be prudent.³ Indeed, there is no shortage of specific issues demanding attention of one kind or another.

Relations Between North and South at Rio

As was made clear in Rio, the industrial powers must be sensitive to how they place environmental demands on the developing countries. As the less developed countries point out, the industrial countries have consumed much of their own natural resource bases, with consequences for the Earth's atmosphere, forests, ocean fisheries, and other parts of the "global commons." Were they now to place severe and unrelenting demands on the developing countries to protect their natural environments—without providing substantial financial contributions to help these poorer countries do so--they could be accused of a measure of hypocrisy and unfairness.

Such dissonance between the industrial powers and the developing world could have unfortunate consequences. In addition to a further deterioration of the natural environment, less effective cooperation on other important matters might result, including efforts to combat terrorism and control proliferation of weapons of mass destruction. The Western donors, while not in accord with all of the developing countries' arguments or demands, did show some sensitivity at Rio to the need to help other countries with their environmental and pollution policies.⁴

Treaties on Biological Diversity and Climate and Agenda 21

A number of documents were produced in Rio. In the Framework Convention on Climate Change, the more developed countries agreed to reduce their emissions of greenhouse gases to 1990 levels by the year 2000. And in the Convention on Biological

William K. Stevens, "Countries Agree to Hasten Steps to Guard Ozone," The New York Times, November 26, 1992, p. A1.

Paul Lewis, "Negotiators in Rio Agree to Increase Aid to Third World," The New York Times, June 14, 1992, p. A1.

Diversity, all countries pledged to help protect the richness of the Earth's ecosystems.

The so-called Agenda 21 document, adopted consensually at Rio as a nonbinding statement of principles, provided several specific proposals for expanding aid. In it, the industrialized countries promised to provide financial help so that the less wealthy countries can find more environmentally sustainable (but sometimes more expensive) ways to develop.⁵ The wealthier countries reaffirmed their earlier pledge--made at the United Nations some years before--to try to make 0.7 percent of their gross domestic product available for development aid. Were they to reach the U.N. goal, a total of some \$125 billion in annual development aid would be available, in contrast to less than half that amount today. This indeed was the amount that the UNCED's secretariat asked from the donor community in order to carry out Agenda 21.6 Although many development efforts are not aimed directly at the environment, most have considerable bearing on

At this point, the 0.7 percent goal is unlikely to be met. But even though it is somewhat arbitrary, Western countries could be taking risks to ignore it. The Agenda 21 document states that developing countries generally do not consider environmental matters their first priority. Their top priority is development, a point explicitly stated in Article 4.7 of the Framework Convention on Climate Change.⁷

Current Mechanisms for Implementing Agenda 21

Many of the institutional frameworks for addressing the environmental concerns raised in Rio are in place. They include a global forest fund, a substitution fund for chlorofluorocarbons that was part of the Montreal Protocol phasing out these ozonedepleting chemicals, a Global Environmental Facility providing more general funds, and an explicit focus on environmental sustainability in programs run by the Agency for International Development and the World Bank. But the limited amounts of funding available may constrain the scope of approaches to dealing with these concerns.

Rio Agenda: Illustrative U.S. Budgetary Increases

Where might resources be fruitfully increased? Again, this study cannot spell out detailed programmatic strategies on a country-by-country or even continent-by-continent basis. But it is necessary to give some sense of which threats to human health and environmental preservation are both acute and amenable to near-term solution.

As with all aid programs, there are reasons to be wary of new ideas and cautious in implementing them. Many of these ideas have been discussed in previous chapters--including not subsidizing corrupt or inefficient governments, finding workable and sustainable programs, and focusing on broader economic and legal issues rather than expecting miracles out of aid. But a couple of issues have special relevance in the environmental and pollution realm. First, if local air and water pollution are somewhat lower in priority or urgency than the issues addressed in Chapters 2 through 5, attacking them more aggressively may distract attention and resources from what may be even more pressing matters. In addition, using trade levers, such as those in the NAFTA accord, may provide a more effective way of ensuring that developing countries have incentives to improve their environmental practices systematically. It is important therefore to go slowly and carefully with any expanded Rio agenda.

The ideas summarized below and originating in a 1992 World Bank study represent one possible streamlined approach to a new global environmental initiative. Although ambitious, it calls for about \$10 billion a year from the donor community--a far cry below the amounts discussed in *Agenda 21*.

Carnegie Endowment National Commission, Changing Our Ways, pp. 38-46; Lewis, "Negotiators in Rio Agree to Increase Aid to Third World."

See Section 33.15 of Agenda 21, found, for example, in Richard N. Gardner, Negotiating Survival: Four Priorities After Rio (New York: Council on Foreign Relations Press, 1992), p. 54.

^{7.} Ibid., p. 82.

World Bank Illustrative Agenda

In a landmark 1992 annual report focusing on the environment, the World Bank identified four programmatic areas dealing with environmental preservation that have not been examined elsewhere in this study.⁸

- o Controlling particulate emissions from coal power plants;
- o Reducing acid output from newer coal plants;
- Changing to unleaded motor fuels and installing controls on the main pollutants from vehicles;
 and
- o Reducing effluents and wastes from industry.

The spirit of this list of priorities is consistent with the themes of Chapter 5 as well, especially in its focus on environmental issues that could impinge on human health. But it extends beyond them by trying to reduce damage to the atmosphere and to water and forest resources.

Estimating Resource Requirements

As the World Bank calculated recently, the approximate annual price tag for each of these activities is several billion dollars. To be specific, reducing particulate emissions from older coal power plants might require \$2 billion a year, reducing acid emissions another \$5 billion, expanding the use of un-

leaded fuels and cleaning up vehicular emissions some \$10 billion, and cleaning up effluents from industries in general about \$10 billion to \$15 billion.

The total of these figures is \$27 billion to \$32 billion a year. If the donor share of these costs is about one-third, some \$9 billion to \$11 billion in additional foreign aid would be required. Taking 25 percent of this amount--the assumed U.S. share-yields about \$2 billion to \$3 billion per year.

In addition, as a major study by the Office of Technology Assessment recently concluded, it might be reasonable to provide additional sums to develop better energy technologies for developing countries. This goal is also endorsed in the Framework Convention on Climate Change. 10 Expanding existing efforts by 100 percent or more, some \$200 million to \$300 million a year might be added to U.S. research and development efforts in these areas.¹¹ Complementary efforts might go beyond research and try some pilot programs using innovative energy technologies such as solar hydrogen in parts of the developing world where they stand the best chance of success. Development organizations already fund some of these types of efforts, but they might be expanded.

To the extent that new energy technologies become available--or at least begin to show long-term promise--the tendencies for countries to pursue dangerous nuclear energy capabilities may be less-ened. And if Western countries choose not to export plutonium-power technologies, they will be able to rebut the charge that they are sabotaging the poorer countries' future economic prospects provided that they offer suitable energy alternatives.

World Bank, World Development Report 1992: Development and the Environment (New York: Oxford University Press, 1992), pp. 170-178.

For more discussion of this issue in an environmental context, see World Bank, World Development Report 1993: Investing in Health (New York: Oxford University Press, 1993), pp. 90-99.

^{10.} It appears in Article 4.5; see Gardner, Negotiating Survival, p. 81.

^{11.} Office of Technology Assessment, Fueling Development: Energy Technologies for Developing Countries (1992), pp. 261-286.



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